RECENT RADAR OBSERVATIONS OF FOUR NEAR-EARTH ASTEROIDS

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We present Arecibo and Goldstone delay-Doppler radar observations of near-Earth asteroids 2000 EH26, 2000 YA, 4183 Cuno, and 1999 JM8 observed between July 1999 and December 2000. Arecibo images of 2000 EH26 and 2000 YA place up to four 15-m-resolution pixels on each object and establish lower bounds on their maximum dimensions of about 60 meters. 2000 EH26 has a 13-cm bandwidth of only ~0.1 Hz, consistent with a subradar latitude that was close to a pole or with a rotation period that exceeds 1 day if the subradar latitude was nearly equatorial. Arecibo images suggest a 1.3-h upper bound on 2000 YA's rotation period, consistent with the photometrically-derived period obtained by Pravec et al. (pers. comm.) and suggesting that 2000 YA is a strength-bound monolith. Arecibo images of Cuno reveal an elongated object with a prominent radar-dark feature that may represent one or more concavities. The image's leading edge is flat over a narrow range of rotation phases; it may be due to a planar facet ~2 km wide. Goldstone and Arecibo images of 1999 JM8 on 17 days in July-August, 1999 reveal a slowly rotating, irregularly-shaped object with a maximum dimension that exceeds 5 km, numerous crater-like features with diameters from ~100 m to more than 1 km, and at least one large concavity whose nature is unclear. Arecibo 1999 JM8 images provide the strongest evidence to date for a circular polarization ratio feature on any asteroid.